## AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application. Please amend the claims, as follows:

1-20  (Canceled)

21.  (Currently Amended)  An optical fiber preform elongation process, comprising:

heating the preform so as to soften one region thereof;

elongating the preform by submitting the preform to a traction;

determining, during the step of elongating, the preform diameter in at least one measuring point along the preform;

controlling the step of elongating on the basis of the determined diameter;

measuring, during the step of elongating, at least a geometrical parameter of the preform, the geometrical parameter being different than the determined diameter; and

controlling, during the step of elongating, the position of said ~~diameter~~ at least one measuring point according to the measured geometrical parameter.

22.  (Previously Presented)  The process according to claim 21, wherein measuring at least a geometrical parameter of the preform comprises determining the profile of at least a portion of the softened region.

23.  (Previously Presented)  The process according to claim 22, wherein measuring at least a geometrical parameter of the preform comprises detecting, from said

determined profile, at least one among a softened region starting point and a softened region final point, and wherein controlling the position of said measuring point comprises choosing a diameter measuring point located at a predetermined distance from one among the softened region starting point and the softened region final point.

24.　(Previously Presented)　The process according to claim 23, wherein measuring at least a geometrical parameter of the preform further comprises detecting, from said determined profile, the length of the softened region, and wherein said predetermined distance is a predetermined percentage of said length.

25.　(Previously Presented)　The process according to claim 22, wherein determining the profile comprises detecting a predetermined number of points along the profile of the preform and interpolating said points.

26.　(Previously Presented)　The process according to claim 22, wherein determining the profile comprises capturing a digital image of the at least a portion of the softened region.

27.　(Previously Presented)　The process according to claim 21, wherein controlling the step of elongating comprises comparing the determined diameter with a target diameter.

28.    (Previously Presented)  The process according to claim 21, wherein heating the preform comprises feeding the preform to a furnace at a first speed, and submitting the preform to a traction which comprises pulling the preform out of the furnace at a second speed; and wherein controlling the step of elongating comprises controlling at least one among the first speed and the second speed.

29.    (Previously Presented)  The process according to claim 21, wherein heating the preform comprises exposing the preform to a heater movable along a preform axis at a first speed, and applying a traction which comprises pulling at least one end of the preform at a second speed, and wherein controlling the step of elongating comprises controlling at least one among the first speed and the second speed.

30.    (Currently Amended)  An optical fiber preform elongation process, comprising:

   heating the preform so as to soften one region thereof;

   elongating the preform by submitting the preform to a traction;

   determining a preform diameter at a measuring point in the softened region;

   determining at least a geometrical parameter of the preform which comprises detecting the profile of at least a portion of the softened region, the geometrical parameter being different than the determined preform diameter; and

   controlling the step of elongating on the basis of the determined preform diameter; and detected geometrical parameter.

   controlling the position of the measuring point according to the geometrical parameter.

31.    (Previously Presented)  The process according to claim 30, wherein detecting the profile comprises detecting a predetermined number of points along the profile of the preform and interpolating said points.

32.    (Currently Amended)  ~~the~~ The process according to claim 30, wherein detecting the profile comprises capturing a digital image of the at least a portion of the softened region.

33.    (Currently Amended)  The process according to claim 30, wherein ~~determining at least a geometrical parameter further comprises determining the preform diameter in a measuring point of the softened region and wherein~~ controlling the step of elongating comprises comparing the determined diameter with a target diameter.

34.    (Previously Presented)  The process according to claim 30, wherein determining the preform diameter comprises controlling the position of the measuring point according to said detected profile.

35.    (Previously Presented)  The process according to claim 33, further comprising controlling the target diameter according to said detected profile.

36.    (Previously Presented)  The process according to claim 33, wherein the preform diameter is determined from said detected profile.

37.    (Currently Amended)  The process according to claim 34 30, wherein

determining at least a geometrical parameter comprises determining, from said detected

profile, at least one among a softened region starting point and a softened region final

point, and wherein controlling the position of the measuring point comprises choosing a

measuring point located at a predetermined distance from one among the softened

region starting point and the softened region final point.


38.    (Previously Presented)  The process according to claim 37, wherein measuring

at least a geometrical parameter of the preform further comprises detecting, from said

determined profile, the length of the softened region, and wherein said predetermined

distance is a predetermined percentage of said length.


39.    (Currently Amended)  A process for manufacturing an optical fiber, comprising

producing a glass preform and drawing the glass preform into an optical fiber, wherein

producing a glass preform comprises the steps of:

heating an intermediate preform so as to soften one region thereof;

elongating the intermediate preform by submitting the intermediate preform to a

traction;

detecting, during the step of elongating, the preform diameter in at least one

measuring point along the intermediate preform;

controlling the step of elongating on the basis of the detected diameter;

measuring, during the step of elongating, at least a geometrical parameter of the preform, the geometrical parameter being different than the detected diameter; and

varying, during the step of elongating, said at least one measuring point according to the measured geometrical parameter.

40.    (Currently Amended) An apparatus for elongating an optical fiber preform, comprising:

a monitoring device for obtaining information on geometrical parameters of the preform being elongated, said monitoring device comprising an image capturing device for obtaining a profile of at least a portion of a softened region of the preform, and a processing device for analyzing the profile for and extracting information on the preform geometrical parameters; and

a control device for controlling at least a location of a measuring point on the preform elongation process parameters using the preform geometrical parameters information, wherein the geometrical parameters information is different than a preform diameter determined at the measuring point.

Kindly add the following new claim 41:

41.    (New) An apparatus for elongating an optical fiber preform, the apparatus comprising:

means for elongating the preform;

means for determining the preform diameter in at least one measuring point along the preform;

means for controlling the elongation of the preform on the basis of the determined diameter;

means for measuring at least a geometrical parameter of the preform, the geometrical parameter being different than the determined diameter; and

means for controlling the position of said diameter measuring point according to the measured geometrical parameter.